Application No. 10/800,131
Filed: March 12, 2004
TC Art Unit: 3644
Confirmation No.: 6931

REMARKS

Claims 1-33, 35, 39, 40, 64, 65, 67-71, and 74-84 have been rejected under 35 U.S.C. § 103(a) over Brown in view of Schmittle and Vaux. Reconsideration of this rejection is respectfully requested.

In the "Response to Arguments" section, the Examiner notes that Brown in view of Schmittle and Vaux meet the claim 1 recitation that the passive retaining medium of the landing pad retains the aerial vehicle directly to the landing pad with no further forward motion component of the vehicle with respect to the landing pad upon affixation, because a loop and hook system on a helicopter will not have a forward movement when the hook is attached to the loop. Applicants, however, submit for the Examiner's consideration that this argument is a good reason why there is no teaching or suggestion to make the combination in the first place.

Brown, which discloses a skid assembly for a helicopter, is silent as to any sort of capture system for the helicopter. Thus, there is no teaching in Brown to add a capture system to the disclosed helicopter skid assembly.

Schmittle discloses a recovery system employing an inflatable cushion underneath an aircraft. A fastening material on the cushion adhesively contacts a floating platform. This system is suitable for aircraft having a small forward component of motion during landing. Schmittle states: "Landing and stopping of the aircraft then occurs by contacting the deck with the fastening material on the inflatable cushion so that the forward motion of the aircraft is slowed and then arrested." (Col. 4, lines 30-33)

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Schmittle also states: "The novel combination of utilizing a thrust vectoring fuselage 10 together with an inflatable cushion 12 allows the aircraft to be landed in a confined space such as platform P without damaging or unduly stressing the in-flight equipment on-board or the aircraft itself." (Col. 6, line 65, to col. 7, line 2) (See also col. 5, lines 25-32; col. 6, lines 14-26; col. 7, lines 54-60.) Thus, Schmittle teaches the use of an inflatable cushion that allows some forward motion of the aircraft prior to stopping.

The cushion of Schmittle also provides some flexibility for an aircraft landing on a platform that is moving on high seas. Schmittle states: "The downward facing wall of the inflatable cushion is preferably sufficiently flexible such that it is capable of conforming to the angle of tilt, if any, of the flight deck as may occur during aircraft landing in a high sea state." (Col. 4, lines 48-51) (See also col. 7, lines 3-12.)

Applicants respectfully submit that it would not have been obvious to use complementary engaging parts on the shoes of Brown along with a landing pad of Vaux that has the other complementary engaging parts as taught by Schmittle to allow a helicopter to land safely and quickly. Neither Brown nor Vaux relates to a vehicle recovery system. Schmittle does not relate to a recovery system for helicopters. Rather, Schmittle relates to a recovery system for arresting forward movement of an aircraft that typically includes a forward component of motion during landing. As such, it would not be appropriate to decouple the engaging parts from the cushion of Schmittle and place them on the shoe of Brown. Accordingly, Applicants submit that an appropriate and

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reasonable conclusion from these teachings is that the present invention is not obvious.

Amended claim 1 recites with more particularity a recovery system that is suitable for lightweight aerial vehicles having a downwardly extending landing element. Claim 1 recites a landing pad having a securing system for removably affixing the landing pad to a supporting surface (from claim 57). The shoe includes a fastening system for removably fastening the shoe to the landing element of the aerial vehicle (from claim 70). Thus, with this system, a lightweight aerial vehicle can land and be captured on the landing pad. The shoe can be unfastened from the landing element. The vehicle can then be hoisted off the landing pad by a cart (see claims 74-76), and the landing pad can be cleared off the supporting surface.

In addressing the problem of capturing a lightweight aerial vehicle, the claimed system provides hardware components on the aerial vehicle that are relatively light weight, are aerodynamic, are mechanically simple, and are simple to use (Applicants' specification, page 3, lines 12-15). In contrast, prior art systems employ a 100 pound socket on the undersurface of the aerial vehicle, which is a significant load for a lightweight aerial vehicle (Applicants' specification, page 1, line 27, to page 2, line 7). None of Brown, Schmittle, or Vaux addresses the particular problem of capturing lightweight aerial vehicles. Schmittle's recovery system is concerned with a different problem, that of arresting forward motion of an aircraft.

Furthermore, Schmittle's recovery technique is to deploy an inflatable cushion beneath the aircraft. Even if Schmittle were combined with Brown and Vaux, the presently claimed invention

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would not result. One skilled in the art when viewing Schmittle, Brown, and Vaux would not pick and choose only those elements that would arrive at the presently claimed invention, namely, to decouple the hook projections 18 from the cushion of Schmittle and place them on the skid assembly of Brown. It would be much more likely that one of skill in the art, viewing Schmittle, would eliminate not only the skid assembly 10 but also the skid tube 15 of Brown and replace them with the inflatable cushion 12 of Schmittle. It is only Applicants' invention that teaches a shoe removably mountable to a landing element, the shoe having a base and a passive retaining medium as recited in claim 1.

Also, claim 1 as amended further recites that the landing pad comprises a base and the shoe comprises a base (from claims 2, 12, 29, and 65). The passive retaining media of the landing pad and the shoe are supported by the corresponding bases. Dependent claims 3, 4, 5, 6, 13, 14, 15, 16, further recite a substrate for supporting the passive retaining medium. Schmittle gives no details as to how the hook and loop projections 16, 18 are affixed to or supported by the cushion 12 or the landing platform P. Brown discloses a skid assembly in which a skid pad 12 is formed by molding. Note that element 17 in Fig. 5 is a casting mold (not a substrate of the skid pad). See col. 6, lines 20-21. There is no teaching Brown as to how to include the hook and loop projections of Schmittle with such a molded part.

Accordingly, for these several reasons, independent claim 1 and the claims dependent therefrom are believed to be patentable over Brown in view of Schmittle and Vaux.

Claim 34 has been rejected under § 103(a) over Brown in view of Schmittle and Vaux and further in view of Gerstin. This claim

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is believed to be patentable for the reasons set forth above with respect to claim 1, and accordingly no further comment regarding this rejection is believed necessary at this time.

Claims 36, 38, 57-63, and 73 have been rejected under § 103(a) over Brown in view of Schmittle and Vaux and further in view of Wellman. Regarding claim 57, Wellman has been cited for teaching a securing system. However, Wellman discloses an inflatable landing platform that floats on water. The fittings 41 are used to attach to tow lines 40 from small boats 38, not to removably affix a landing pad to a supporting platform. Accordingly, claim 1, which as amended recites a securing system for the landing pad, is believed to be patentable for this reason as well.

Claims 41-45 have been rejected under § 103(a) over Brown in view of Schmittle and Vaux and further in view of Eftestol. These claims are believed to be patentable for the reasons set forth above with respect to claim 1, and accordingly no further comment regarding this rejection is believed necessary at this time.

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In view of the above remarks, all claims are believed to be in condition for allowance, and reconsideration and indication thereof are respectfully requested. The Examiner is encouraged to telephone the undersigned attorney to discuss any matter that would expedite allowance of the present application.

Respectfully submitted,

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